IBM
(Test Sponsor: NVIDIA Corporation)

IBM POWER 9
Power Server AC922 (8335-GTC)

SPECaccel_omp_peak = Not Run
SPECaccel_omp_base = 4.01

ACCEL license: 019
Test sponsor: NVIDIA Corporation
Tested by: NVIDIA Corporation

Hardware
CPU Name: POWER9, altivec supported
CPU Characteristics:
CPU MHz: 2300
CPU MHz Maximum: 3800
FPU: --
CPU(s) enabled: 40 cores, could not determine chips, 20 cores/chip, 4 threads/core
CPU(s) orderable: 1-2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 512 KB I+D on chip per core
L3 Cache: 10 MB I+D on chip per chip
Other Cache: None

Accelerator
Accel Model Name: POWER 9
Accel Vendor: IBM
Accel Name: IBM POWER 9
Type of Accel: CPU
Accel Connection: Not applicable
Does Accel Use ECC: Yes
Accel Description: --
Accel Driver: --
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Test date: Nov-2019
Hardware Availability: Dec-2017
Software Availability: Nov-2019

Hardware (Continued)

Memory: 144 GB
143.291 GB fixme: If using DDR3, format is: 'N GB (M x N GB nRxn PCn-nmmnR-n, ECC)'
Disk Subsystem: 927 GB add more disk info here
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 7.5 (Maipo)
Red Hat Enterprise Linux Server release 7.5 (Maipo) 4.14.0-49.8.1.el7a.ibmnnvidia.6.1.ppc64le
Compiler: C/C++/Fortran : Version 19.10 of PGI Professional Edition
File System: xfs
System State: Run level 3 (add definition here)
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.postencil</td>
<td>41.7</td>
<td>2.61</td>
<td>41.3</td>
<td>2.64</td>
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<td>504.polbm</td>
<td>24.6</td>
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<td>24.5</td>
<td>4.98</td>
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<td>514.pomriq</td>
<td>2484</td>
<td>0.250</td>
<td>2021</td>
<td>0.307</td>
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<tr>
<td>550.pmd</td>
<td>608</td>
<td>0.397</td>
<td>607</td>
<td>0.397</td>
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<tr>
<td>551.ppaln</td>
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<td>3.34</td>
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<td>552.pep</td>
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<tr>
<td>553.pclvrleaf</td>
<td>135</td>
<td>8.51</td>
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<td>8.52</td>
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<tr>
<td>554.pcg</td>
<td>50.9</td>
<td>6.54</td>
<td>51.0</td>
<td>6.53</td>
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<tr>
<td>555.pseismic</td>
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<td>3.59</td>
<td>78.0</td>
<td>3.61</td>
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<td>556.psp</td>
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<td>51.4</td>
<td>15.9</td>
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<tr>
<td>557.pcsn</td>
<td>44.2</td>
<td>19.4</td>
<td>44.3</td>
<td>19.4</td>
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<tr>
<td>559.pmnGhost</td>
<td>67.8</td>
<td>5.86</td>
<td>68.0</td>
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<tr>
<td>560.piibdc</td>
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<tr>
<td>563.pswim</td>
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<td>30.9</td>
<td>5.14</td>
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<tr>
<td>570.pbt</td>
<td>53.7</td>
<td>14.5</td>
<td>54.2</td>
<td>14.4</td>
</tr>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
SPEC ACCEL OMP Result

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Submit Notes
The config file option 'submit' was used.

Platform Notes

Sysinfo program /local/home/cparrott/SPEC/ACCEL-1.3/Docs/sysinfo
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35
running on perf-wsn1 Wed Nov 13 02:27:50 2019

This section contains SUT (System Under Test) info as seen by
some common utilities. To remove or add to this section, see:
http://www.spec.org/accel/Docs/config.html#sysinfo

From /proc/cpuinfo
  clock : 3616.000000MHz
  machine : PowerNV 8335-GTC........
  model : 8335-GTC........
  platform : PowerNV
  revision : 2.2 (pvr 004e 1202)
  cpu : POWER9, altivec supported
  * 0 "physical id" tags found. Perhaps this is an older system,
  * or a virtualized system. Not attempting to guess how to
  * count chips/cores for this system.
  * 160 "processors"
  cores, siblings (Caution: counting these is hw and system dependent. The
  following excerpts from /proc/cpuinfo might not be reliable. Use with
  caution.)

From /proc/meminfo
  MemTotal:       150251584 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 7.5 (Maipo)

From /etc/*release* /etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux Server"
    VERSION="7.5 (Maipo)"
    ID="rhel"
    ID_LIKE="fedora"
    VARIANT="Server"
    VARIANT_ID="server"
    VERSION_ID="7.5"
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.5 (Maipo)"
    redhat-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)

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**SPEC ACCEL OMP Result**

**IBM**  
(Test Sponsor: NVIDIA Corporation)  
**IBM POWER 9**  
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Test sponsor: NVIDIA Corporation  
Tested by: NVIDIA Corporation

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**Platform Notes (Continued)**

- system-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)  

```bash  
uname -a:  
Linux perf-wsn1 4.14.0-49.8.1.el7a.ibmnvidia.6.1.ppc64le #1 SMP Tue Jun 5 13:56:12 -03 2018 ppc64le ppc64le ppc64le GNU/Linux  
run-level 3 Oct 6 15:08
```

SPEC is set to: /local/home/cparrott/SPEC/ACCEL-1.3

(End of data from sysinfo program)

---

**General Notes**

Environment variables set by runspec before the start of the run:

- HUGETLB_PATH = "/mnt/hugetlb"  
- KMP_ALL_THREADS = "80"  
- OMP_PROC_BIND = "true"  
- OMP_THREAD_LIMIT = "80"

---

**Base Compiler Invocation**

C benchmarks:  
pgcc

Fortran benchmarks:  
pgcc pgfortran

Benchmarks using both Fortran and C:  
pgcc pgfortran

---

**Base Portability Flags**

- 503.postencil: -DSPEC_USE_INNER_SIMD
- 504.polbm: -DSPEC_USE_INNER_SIMD
- 514.pomriq: -DSPEC_USE_INNER_SIMD
- 550.pmd: -DSPEC_USE_INNER_SIMD
- 551.ppalm: -DSPEC_USE_INNER_SIMD
- 552.pep: -DSPEC_USE_INNER_SIMD

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Base Portability Flags (Continued)

553.pclvrleaf: -DSPEC_USE_INNER_SIMD
554.pcg: -DSPEC_USE_INNER_SIMD
555.pseismic: -DSPEC_USE_INNER_SIMD
556.psp: -DSPEC_USE_INNER_SIMD
557.pcsfp: -DSPEC_USE_INNER_SIMD
559.pmniGhost: -DSPEC_USE_INNER_SIMD
560.pilbdc: -DSPEC_USE_INNER_SIMD
563.pswim: -DSPEC_USE_INNER_SIMD
570.pbt: -DSPEC_USE_INNER_SIMD

Base Optimization Flags

C benchmarks:
-fast -Mnouniform -mp=nvomp

Fortran benchmarks:
-fast -Mnouniform -mp=nvomp

Benchmarks using both Fortran and C:

553.pclvrleaf: -fast -Mnouniform -mp=nvomp
559.pmniGhost: -fast -Mnouniform -mp=nvomp -Mnomain

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC ACCEL v1.3.